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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,058	09/08/2003	Bruce L. Troutman	ZILG.244US1	5500

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EXAMINER	
CHOI, WOO H	

ART UNIT	PAPER NUMBER
2186	

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/658,058	TROUTMAN ET AL.	
	Examiner	Art Unit	
	Woo H. Choi	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-21 and 25-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9-21 and 25-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/24/04,9/8/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 9 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by DeVita *et al.* (US Patent No. 4,325,118, hereinafter "DeVita").

DeVita discloses a microprocessor, comprising:

a central processing unit with an instruction set including three-byte instructions (col. 1, lines 37 – 40);

a memory for storing the instructions, wherein the instructions are stored contiguously (col. 1, lines 40 – 44); and

a memory interface for supplying the instructions from the memory to the central processing unit, wherein each of said instructions is supplied in a single fetch operation (col. 1, lines (col. 40, lines 40 – 44, a single instruction fetching operation is performed by fetching three bytes sequentially).

3. Claims 11 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Kojima *et al.* (US Patent No. 5,880,981, hereafter "Kojima").

Kojima discloses a microprocessor, comprising:

a central processing unit with an instruction set including three-byte instructions (col. 4, line 27);

a one time programmable memory for storing the instructions, wherein the instructions are stored contiguously (col. 4, lines 26 – 7); and

a memory interface with a three byte bus (figure 1, 9) for supplying the instructions from the memory to the central processing unit, wherein each of said instructions is supplied in a single fetch operation (col. 4, lines 55 – 6).

4. Claims 25 – 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Pickett *et al.* (US Patent No. 6,101,595, hereinafter "Pickett").

5. With respect to claims 25 and 26, Pickett discloses a method of operating a microprocessor, the microprocessor comprising a central processing unit with an instruction set including N-byte instructions (figure 5, column 17, lines 6 – 9), a memory for storing the instructions (figure 3, 112), and a memory interface for supplying the instructions from the memory to the central processing unit, wherein N is an integer greater than one, the method comprising:

logically organizing the memory as a plurality rows of M columns, wherein M is an integer greater than one and wherein N and M are relatively prime, wherein N is equal to three and M is equal to four (figure 3, 112, M = 4 and figure 5, IN2, N = 3);

programming the instruction set into the memory (col. 2, lines 50 – 51), wherein the instructions are stored contiguously in the memory (col. 2, lines 58 – 59); and

operating the interface whereby each of the instructions can be supplied from the memory to the central processing unit in a single fetch operation (col. 7, lines 27 – 28).

6. With respect to claim 27, said instruction set further includes two byte instructions (figure 5, IN0, IN2) and one byte instructions (IN1).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 28 – 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baji *et al.* (US Patent No. 5,535,417, hereinafter "Baji") in view of Keiichi (Japenese Patent Publication No. 62112292).

9. With respect to claims 28 and 29, Baji discloses a method of operating a microprocessor, the microprocessor comprising a central processing unit with an instruction set including N-byte instructions (col. 4, lines 55 – 58), a memory for storing the instructions (col. 5, line 7, figure 1, 1400), and a memory interface for supplying the instructions from the memory to the central processing unit via a bus that is three bytes wide (col. 4, lines 55 – 58, figure 1, 1114), wherein N is an integer greater than one, the method comprising:

programming the instruction set into the memory (figure 1, 1400), wherein the instructions are stored contiguously in the memory; and

operating the interface whereby each of the instructions can be supplied from the memory to the central processing unit in a single fetch operation (fetching one instruction, by definition, is done in a single fetch operation).

However, Baji does not specifically disclose that the memory is logically organized as a plurality of rows of M columns, wherein M is an integer greater than one and wherein N and M are relatively prime. On the other hand, Keiichi discloses a memory that is logically organized as a plurality of rows of M columns, wherein M is an integer greater that one and wherein N and M are relatively prime (see figure, the memory is organized as a plurality of rows of 4 columns)

It would have been obvious to one of ordinary skill in the art, having the teachings of Baji and Keiichi before him at the time the invention was made, to use the memory access teachings of the memory system of Keichi in the memory system of the computer system of Baji,

in order to be able to access retrieve data/instruction spanning over a word boundary in one memory access.

11. With respect to claim 30, Baji discloses a one time programmable memory (figure 23, 3200, ROM).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Woo H. Choi whose telephone number is (703) 305-3845. The examiner can normally be reached on M-F, 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt Kim can be reached on (703) 305-3821. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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August 20, 2004

MATTHEW KIM
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